LabEx continued

IMU
Intelligence of Urban Worlds (Intelligences des Mondes Urbains)

2020 / *2025*

Doc. *Evaluation form*

Project acronym	**IMU**
Project title in French	**Intelligences des Mondes Urbains**
Project title in English	**Intelligences of Urban Worlds**
Project manager	***Gilles Gesquiere, University Professor, Université Lumière Lyon 2***
Total cost	**€114m**
Requested funding	€4,378,378 including non-recoverable VAT
Leading institution	*Institution name: University of Lyon* *Status:* ***EPSCP***
	Is this project embedded in an IDEX / I-SITE project? x Yes *IDEX acronym: IDEXLYON*
Research unit(s) involved in the Labex RNSR number	List of units - RNSR #: ARAR (UMR 5138) 200111819X Archéorient (UMR 5133) 200311815J CIEREC(EA3068) 199914382S CETHIL (UMR 5008) 199911704F CIHAM (UMR 5648) 199412070A CITI (EA 3720) 200314989J CMW (UMR 5283) 201119420R DEEP (EA 7429) 201621881U ELICO (EA 4147) 200715391D ERIC (EA 3083) 199914397H EVS (UMR 5600) 199511664[E] GATE (UMR 5824) 199512098B GRePS (EA 4163) 200715406V HiSoMA (UMR 5189) 200311860H IAO (UMR 5062) 199511753B IRAA (USR 3155) 200817680M IRD (Images Récits Documents) IRI (Institut de recherche et d'innovation) IRPHiL (EA 4187) 200715427T LAET (UMR 5593) 197112027D LARHRA (UMR 5190) 200311861J LBMC (UMR T9406) 200717404S LEHNA (UMR 5023) 199911718W LEM (UMR 5557) 199511997S LESCOT LGCB LICIT 199318205Y LIRIS (UMR 5205) 200511875R LMFA (UMR 5509) 199511953U MAP-ARIA (UMR 3495) 200711907S MARGE (EA 3712) 201621841A SMS-ID - GEOMAS 201621882V TRIANGLE (UMR 5206) 200511876S USC 1233 VAS-INRA RS2GP
Doctoral School(s) involved in the Labex	ED 162 - Mechanics, Energy, Civil Engineering and Acoustics (MEGA) ED 483 - Social sciences (Sciences So) ED 485 - Education - Psychology - Information and Communication (EPIC)

	ED 486 - Economics and Management (SEG) ED 487 - Philosophy: History, representation, creation (Philo) ED 512 - Informatics and Mathematics of Lyon (InfoMaths)

Main scientific field of the project	☐ Math Info / *Math Info* ☐ Sciences de la Matière et de l'Energie /*Material and Energy Sciences* ☐ Agro Eco/ *Agronomy Ecology* ☐ Sciences du Système Terre-Univers-Environnement/*Universe, Earth and environment Sciences* ☐ Bio Med / *Biology Medicine* X **Sciences Humaines et Sociales/ *Human and Social Sciences***
Secondary scientific field(s) of the project	☐ Math Info / *Math Info* ☐ Sciences de la Matière et de l'Energie /*Material and Energy Sciences* ☐ Agro Eco/ *Agronomy Ecology* Sciences du Système Terre-Univers-Environnement/*Universe, Earth and environment* *iences* ☐ Bio Med / *Biology Medicine* ☐ Sciences Humaines et Sociales/ *Human and Social Sciences*

List of PIA projects to which this project is connected

Project links with other existing PIA projects (e.g. Equipex, Instituts Convergence, EUR, NCU, SATT, etc.)	● *Institut Convergences: Ecole Urbaine de Lyon (EUL)/ Lyon Urban School (LUS)* ● *EUR: Sciences de l'Eau et des Hydrosystèmes (H2O'Lyon)* ● *SATT Pulsalys*

Liste des établissements partenaires actuels du Labex / *List of partner institutions*

Academic institution name	***Legal status***
Université de Lyon	EPSCP
INSA Lyon	EPSCP
Université Lyon 1	EPSCP
Université Lyon 2	EPSCP
Université Lyon 3	EPSCP
Université Jean Monnet St Etienne	EPSCP
ENTPE	EPSCP
Centrale Lyon	EPSCP
ENS Lyon	EPSCP
ESADSE	Etablissement Public de Coopération Culturelle
IEP Lyon	EPCA
ENSA Lyon	EPCA
ENSA St Etienne	EPCA
INRIA	EPST
IRI	Association de Recherche
VetAgroSup	EPSCP
IFSTTAR	EPST
Research organization name	***Legal status***
CNRS	EPST

Consortium modifications

Partners joining the project

Academic institution name	*Legal status*
Ecole des Mines de Saint Etienne (Institut Mines Telecom) ENSSIB	EPSCP
Research organization name	***Legal status***
INRA INRIA	EPST EPST

- **Partners leaving the project : None**

SUMMARIES

This report begins by reviewing LabEx IMU's activity from 2015 to 2018, when implementation of this innovative project progressed significantly. It then presents the objectives and major scientific orientations that build on this experience, and underpin the request to renew the LabEx.

The initial project assumptions have been confirmed, in terms of both its themes drawn from the generalised urban phenomenon, and its positioning of radical plurality, which together mobilise all the scientific disciplines and urban practitioners (territorial, public and private agents). The project's success was not self-evident, given the strongly experimental nature of its approach. This risk ultimately paid off, as evidenced by the 53 funded projects, the more than 300 publications directly resulting from these projects, the various initiatives conducted in partnership (research chair, studios, workshops, accredited events) and the support for education (VEU, financing of innovative practices). The LabEx was able to develop a genuine community, which today includes 541 members, with 34 laboratories representing all the scientific fields and 21 institutions. In the area of education, new diplomas have been developed at the site: “Altervilles” Master in 2013 and “Ville et Environnements Urbains” (VEU) Master in 2016. International deployment relied on the site's active networks (laboratories, universities and schools) for their synergy and visibility. The international dimension also benefited from the inclusion of foreign researchers as part of the Lyon Collegium[1]. Lastly, LabEx IMU is partially responsible for the momentum that led to the success of the Ecole Urbaine de Lyon (EUL) Convergence Institute and “Ecole Universitaire de Recherche H2O Lyon”.

Grounded in this successful foundation, and following consultations with the entire community including institutional and professional partners, our plan for the 2020-2025 period comprises three facets: restructured research themes and deepened practices of radical multidisciplinarity, enhanced partnership structure, and international actions. The thematic restructuring reflects the lessons learned from IMU.1: Research materials and data, Environments and habitability, Times and rhythms, and Sensitive intelligence of urban worlds are the four key areas. In terms of implementation, studios and organised scientific practices form the core structure, together with the existing research chair and others in planning. Education continues to be a component of the LabEx's activities, supporting increased

[1] Hosting program for foreign researchers

professionalisation in line with the initiatives conducted by IMU.1. Lastly, and in a cross-cutting approach, the CAPIMU project aims to provide the LabEx with a tool for evaluating its innovative practices, to reflexively capitalise on its radical plurality and scientific and epistemological concerns.

The submitted project naturally takes into account the transformations in the site's landscape that have occurred since 2017, with the arrival of two new PIA objects, “Lyon Urban School” and “EUR H2OLyon”. Shared themes and laboratories generate proposals for synergy and collaboration in both research and education.

1. *CONTEXT AND PREVIOUS ACHIEVEMENTS*

1.1. CONTEXT AND SCOPE OF THE PROJECT

The first IMU project, Intelligence of Urban Worlds, designated as IMU.1 in the present document, positioned itself in the research field around an "object" — the generalised urban phenomenon — and an integrative approach creating genuine plurality, bringing together all scientific fields as well as non-academic players. This "radical plurality" embodied by all the members of the initial community, is its signature in the landscape of French urban research. By intersecting questions posed by academic players and “practitioners” – by this latter term, the LabEx culture designates agents outside of the research field, both public (territorial authorities, public administrations) and private (organisations, businesses) – IMU.1 sought to ignite fresh momentum in French urban research by initiating authentic collaborations, ranging from the initial definition of the research issue to the development of materials and their subsequent processing and analysis.

This positioning is more epistemologically radical than more usual multi- or interdisciplinary approaches; it prefaces the expectations of research on a mutual acculturation of the two spheres, "academic" and "practitioner", through symmetrical mutual understanding of practices, knowledge and expertise, through shared formulation of the issues and questions. **As a “Laboratoire d'Excellence”, IMU chose to address contemporary urban issues based on this voluntarily progressive principle of acculturation**: so that the funded projects and actions, involving issues of environments, mobility, location-based customs and practices, would produce results that make sense both scientifically and politically, with a relevance grounded in perspective and objectivity.

A second facet of this approach is to combine scientific practices from different fields of study. These distinct scientific disciplines are individually unable to render the complexity of environmental, social and technical situations, and there is already a long tradition of research exceeding disciplinary boundaries in each of these areas. **The challenge here is to expand such mobilisation to include a plurality of fields**. By having eco-biologists, sociologists and heating engineers work together with geographers, computer archaeologists, developers and hydrologists, IMU.1 promoted a broader and more complex understanding, but also a more original and less comfortable understanding, of the way of production of knowledge in the field of urban studies. Reality rarely discretises itself, and each discipline carves out a portion to investigate, with its history, its conceptual and methodological tools and its paradigms, only a complex and integrative approach can seek to produce knowledge of the complexity of the urban phenomenon.

These two dimensions of the challenge — generalised urban phenomenon and plurality — define IMU's signature within urban studies research. It is exchanges between research partners derived from the plurality of participants (scientists/practitioners) that produce situated and transferable learnings and reveal new

research fronts. IMU.2 (renewal project) seeks to continue to fulfil this challenge in the field of research. It has been joined, at the Lyon-Saint-Etienne site, by other systems that have adopted the principle, and perhaps others still to come (see Figure 1, which provides positioning elements for the review, as well as scenarios proposed for the project). The aim for IMU.2 is to preserve the added values and use them as a lever for the pursuit of a new collective scientific adventure involving researchers, practitioners and users. The Lyon-Saint-Etienne university site benefits today from excellence tools that give it exclusive positioning in research addressing issues of sustainability of territories, urban and environmental dynamics. In less than ten years, capitalising on the learnings from research collaborations undertaken in the 1980s and 1990s, the site obtained recognition of three "clusters" of competencies in this field of exploration at international level:

- LabEx Intelligences des Mondes Urbains (IMU) (2010)
- Institut Convergences Lyon Urban School (EUL) (2017)
- Ecole Universitaire de Recherche sur l'Eau et les Hydrosystèmes (H2O'Lyon) (2018)

These three structures which have won very selective PIA calls for projects each include recognised specialists from all the disciplines working in reference laboratories, which are primarily UMRs (joint research units from CNRS). Their coexistence at the Lyon-Saint-Etienne site creates a concentration of scientific expertise and degree courses without equivalent in France or doubtless in Europe, in terms of the number of experts present, as well as and especially of the breadth of the scientific spectrum covered, and the desire for cooperation that exists between these entities. This existing collaboration experience naturally supports the capacity to implement these systems.

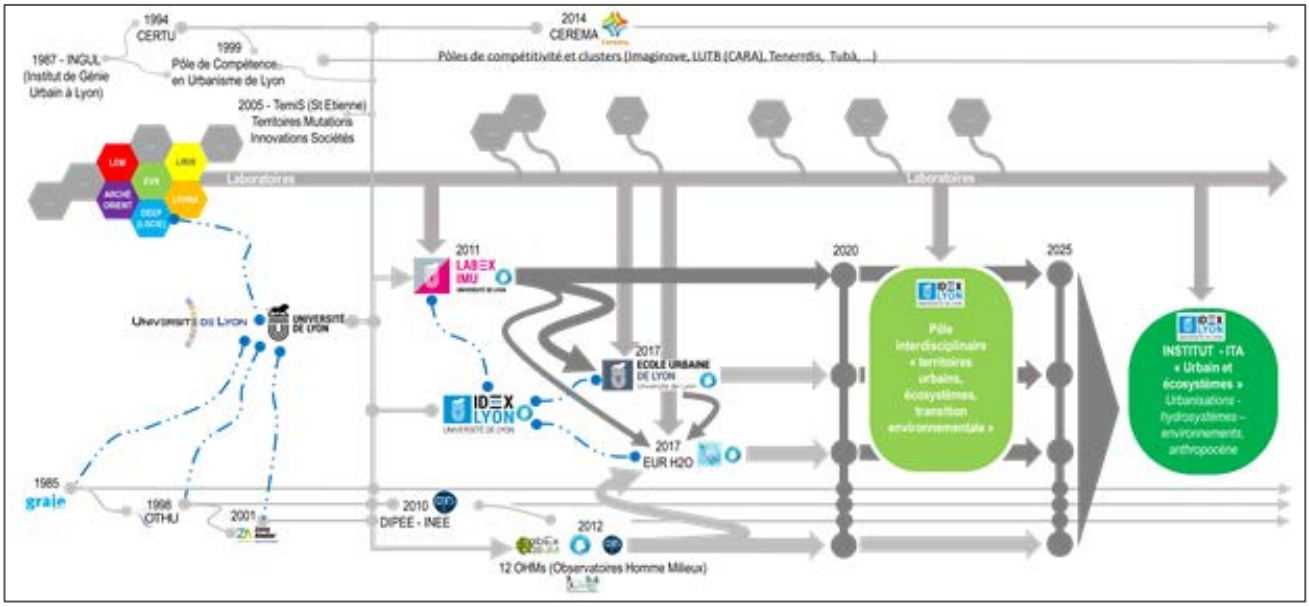

Figure 1: Evolution of the university ecosystem since 2011, and proposed scenario for the 2020-2025 period.

IMU.2 intends over the coming years to help to develop this unique potential that contributes to the site's resonance, in particular via the implementation of actions related to the Lyon Saint-Etienne University IDEX, and intends to strengthen its dynamism by focusing on creating interrelationships between the three entities.

As part of an organisation of urban studies at national level, LabEx IMU has connected with the "Dynamite" and "Futurs Urbains" LabEx to initiate discussions around best practices, taking the form of mutual participation in the various scientific councils since 2017. Over the 2019-2025 period, actions (see below 1.2.5) will aim to

support enhanced structuring of urban studies to increase international visibility. IMU.1 also collaborates with other LabEx at the site, such as with CeLya[2] for issues of urban noise, and initiated discussions with local federating organisations in this area (IRSTV[3], GIS MU[4]).

The international dimension is obviously already strong in IMU, via its 34 laboratories. The LabEx is thus positioned for highly structured collaborations between research centres based on partners already identified by the University of Lyon: China (Tongji, CIUC[5]), Mexico (CCGS[6] and ECOSUR[7] as well as CIESAS[8]), Brazil (ICHT 2017 colloquium in Lyon; ICHT colloquium, 2016 in São Paulo, CAPES-COFECUB winner with the University of São Paulo) and United States (Boston, MIT[9] City Science Medialab).

1.2. MAIN PREVIOUS ACHIEVEMENTS

During the 2015 LabEx evaluation, the panel highlighted a project that was very original and pertinent, in particular due to its positioning of radical plurality and the implementation of a new degree course ("Altervilles Master"). Since that time, IMU has further strengthened its results.

1.2.1. Structuring a community

Today IMU.1 can evaluate the results of its initiatives, productions and steering and financing choices. The first of IMU.1's achievements is the **structuring of a community at the Lyon-Saint-Etienne site**: this is evidenced in the growing number of laboratories and members since 2011 [2012 (25 laboratories, 452 members), 2015 (29 laboratories, 513 members), 2018 (34 laboratories and 541 members)] (see figure 2). This trend indicates the growing visibility and attractiveness of the LabEx, via its founding laboratories, among the site's scientists and practitioners. **IMU.1 thus made it possible to create a community** around the urban phenomenon, as well as initiate new research practices and collaborative partnerships with practitioners. There are several criteria to indicate this: thematic capitalisation that is on the rise (53 multidisciplinary projects involving 162 distinct researchers since 2012), labelling of activities (55 initiatives including numerous symposia, thematic schools, workshops and contributions to books or documentary films), responses to other calls for projects since 2012 (69 ANR projects submitted, ten European projects, regional and other projects).

[2] Centre Lyonnais d'Acoustique
[3] IRSTV, Institut de Recherche en Sciences et Techniques de la Ville
[4] GIS MU, Groupement d'Intérêt Scientifique Modélisation Urbaine
[5] CIUC, China Intelligent Urbanization Center
[6] CCGS, Centro del Cambio Global y la Sustentabilidad en el Sureste
[7] ECOSUR, El Centro de Investigaciones Ecologicas del Sureste
[8] CIESAS, Centro de Investigación y Estudios Superiores en Antropología Social
[9] MIT, Massachusetts Institute of Technology

Figure 2: Evolution of the LabEx community

1.2.2. Co-developing research in urban studies

Upon its creation, the LabEx was organised into six themes and five workshops (Figure 3). Since 2012, researchers and non-academic partners have submitted project proposals as part of an annual call for projects with consistent rules: *"the research projects submitted must involve at least three partners (laboratories and practitioners) including two IMU laboratories from at least two of the core disciplinary groupings designated by IMU — HSS (Human Social Sciences) & architecture on the one hand and experimental or engineering sciences on the other — to ensure scientific multidisciplinarity*" and "*the presence of a practitioner partner — non academic, whether a territorial authority, a business or an organisation — is required*". At the halfway point in 2015 there were 24 projects being financed; today this number is 53, for a total budget of €5,871,232.

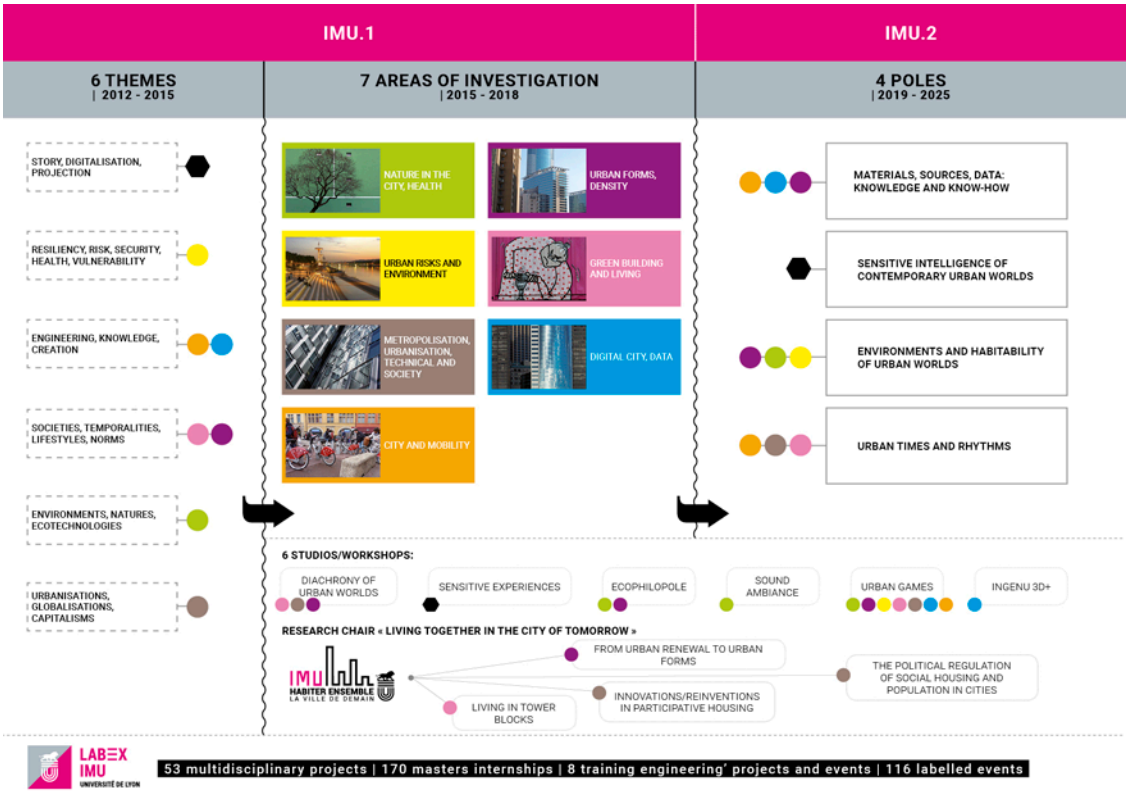

Figure 3: Evolution of the LabEx's thematic structure

Starting in 2015, to communicate more clearly on the LabEx's activity, the thematic structure was reorganised into seven fields of investigation, identified *a posteriori* from the selected projects. Capitalisation of the work conducted and project reviews by peers and Scientific Board advisors were implemented. Initiation and incubation of new projects take place in Studios, informal groups gathering researchers and partners around research questions, supported by the LabEx (facilitation, coordination, networking, support for other calls for projects, etc.).

In 2016, three action areas were defined as priorities, without disrupting a thematic organisation that had nourished certain key topics: mobilities, nature in the city and urban risks. The **field of mobilities** is particularly rich and initiated a powerful dynamic of territorialised experimentation with new methods of data collection (mobile tracking, onboard sensors, etc.), data validation and analysis to better understand user practices and perceptions, their spatial and temporal positioning, and their societal and environmental issues (IMU Priva'Mov, MobiCampus and Véléval projects, among others). Similarly, the **"nature in the city"** and **"urban risks"** areas connect to address pollution (air, water, soil) by supporting collaborative approaches and data crowdsourcing. The **diachronic dimension** has been productive in creating cross-cutting research questions (SoundCityVe project and "project in the city"). Lastly ***modelling / simulation and 3D*** *bring* ***new modalities for understanding these processes of evolution*** *of the city*[10].

To begin capitalising on the initiatives completed, in 2016 the steering committee suggested a joint organisation for these action fronts, creating a story and images of the sensitive urban phenomenon in the "Sensitive experiences and urban research" Studio and in the **Urbimages** initiative[11]. Two additional cross-cutting

[10] More information about these projects can be found in English the LabEx IMU's web site

[11] URBan, Iconography, Media, Archive, Geomodelling, Sound

goals were set: interoperability of urban research data (Platforms) and experimentation in the field on a 1:1 scale (Territories).

The **IMU Research Chair *Inhabiting together the City of Tomorrow (see Figure 3)*** was formed by joint agreement on 2 November 2015, organised by the LabEx with partners including Bouygues Bâtiment Sud-Est, LafargeHolcim, Métropole de Lyon, Grand Lyon Habitat, SACVL[12], ALLIADE Habitat, Habitat et Humanisme. Beyond this, IMU has striven to be part of the site's rich ecosystem around urban issues. IMU maintains regular, long-term relations with these various players (public authorities, companies, consular chambers, associations, startups, clusters). This integration has given rise to numerous partnership projects, sometimes financed by the LabEx but also presented successfully to other funders. This strategy drives the site's urban research approach and is a key contributor to the achievement of the LabEx project.

1.2.3. Education

The 2015 evaluation favourably highlighted the LabEx's participation in developing excellent educational programmes, providing the necessary competencies for the urban challenges of the 21st century. This dynamic has been extended by the LabEx's active support for the development of a new VEU Master that engages the University of Lyon's nine institutions. This master course benefits from the quality of a robust ecosystem driven by the LabEx, combining academic knowledge and territorial expertise to create a joint educational programme. VEU is a broadly multidisciplinary and multi-institution degree that has been operational for the past two years. It combines pathways and innovates in its instructional modalities. By supporting the development and operation of this new degree, IMU has contributed to adapting courses to a diversity of professional evolutions and fields of action. At the same time, the mutual understanding and multidisciplinary dialogue formed within the LabEx largely facilitated the convergence of two "risks and environment" masters' projects, one in economic science and the other in the life sciences, enabling their articulation and co-accreditation.

As part of expanded support for the entire community of the LabEx IMU, four modalities of instructional action were implemented and/or conducted.

- **Financing of multidisciplinary master's internships, as part of a call for researchers or practitioners.** IMU has financed the grants for 112 masters (five months per internship) since 2015, for a total of €312,000. Thirty-two research Masters and 28 Masters in partnership with a practitioner were financed in 2017-2018.
- Collaboration since 2017 with Institut Convergences EUL as part of a **Call for Manifestations of Interest** with respect to educational programme engineering. Eight projects of the 15 submitted were jointly financed by IMU and EUL (summer schools, multidisciplinary education workshops, documentary workshop, system for creating and implementing serious games, instructional cafes).
- Mobilising of doctoral students and young researchers in the association **IMUalpha**[13]. The LabEx has implemented experimental workshops included in the PhD courses and recognised by the site's doctoral schools.
- Awareness-raising among school students of contemporary urban challenges as part of a partnership with **Savanturiers**[14], in its "urban" version, organised at the Lyon site. This programme enables primary

[12] SACVL, Société anonyme de construction de la ville de Lyon

[13] 51 doctoral students or post-doctoral students involved (14 IMU laboratories)

[14] https://les-savanturiers.cri-paris.org/

and secondary school classes to explore the evolution of urban worlds with scientific sponsorship by a mentor (IMU researcher); eight IMU mentors took part in 2018, in collaboration with eight classes representing some 240 students. Under this same partnership, a MOOC[15] on Smart Cities at school was implemented in 2018 with the Savanturiers team and the Centre de Recherches Interdisciplinaires (CRI). Lastly, in June of this year, the Savanturiers congress was organised at the University of Lyon, with the support of LabEx IMU.

In 2018, IMU took part in a lifelong learning initiative on urban logistics conducted by UdL's specialised unit with financing from the AuRA Region, which involved several researchers and laboratories from its community.

1.2.4. IMU in the international arena: Organising the site and international networks

Two goals define IMU's international strategy.

The first seeks to influence the site's structure:

- By identifying applicants to be presented for IDEX Lyon's fellowship projects or the Collegium de Lyon[16], and by supporting researchers with their work and meeting programmes. Three researchers have been welcomed since 2015 (UDDC Bangkok[17], UQAM[18], IAU-USP Brazil[19]).
- By mobilising researchers to contribute to stronger connections between UdL and two of IMU's main targets: Canada and Brazil.
- By supporting teams already formed within IMU: this is how the Conacyt (France-Mexico) and CAPES COFECUB (France-Brazil) ANR projects were won.

The second goal feeds and leverages the networks of the various members and partners:

- Creation of an international External Scientific Council (CSE) that meets annually and contributes to visibility abroad by drawing on the expertise and networks of Canadian, Belgian, German and Italian researchers.
- Labelling of events organised with foreign academic partners: CASS (Chinese Academy of Social Sciences) in Beijing, School of Sociology and Political Science in Shanghai, UQAM, CCGSS (Centre du Changement Global et de la Durabilité) and ECOSUR (Ecole de la Frontière Méridionale) in Mexico.
- Active participation in the creation of the PIN Ville[20] National Information Point of which IMU is a founding member (in 2017, first meeting in Lyon in June 2018); the IMU coordinator is a member of the office. IMU is also associated with the Urban Europe Research Alliance (UERA)[21].
- The IMU HEVD Chair described before facilitates discussions around six experimental territories (Poland, England, Australia, Belgium, Spain and Russia). In the IMU projects financed over the past three years, foreign partners have been included to give them an international dimension (Québec City, University of Laval, University of Chalmers, Museum of Archaeology of Catalonia).

[15] MOOC, Massive Open Online Course
[16] Foreign researcher welcome programme at UdL.
[17] Urban Design and Development Centre
[18] Université du Québec à Montréal
[19] Instituto de arquitetura e urbanismo
[20] http://www.future-isite.fr/actions/international/point-dinformation-national-ville
[21] https://jpi-urbaneurope.eu/stakeholders-partners/uera/

1.2.5. Generating value from the research conducted at IMU

Generating value from the research conducted at IMU relies on several modalities: publications, communication, mediations, contracts and transfers.

Concerning publications, two methodological difficulties must be overcome to present a complete review. There is some difficulty in determining how to identify the publications that can be attributed to the LabEx's activities affiliation of the authors (on HAL[22]), partial metadata, financing indicators and patchy acknowledgements. We have inventoried 65 articles in international reviews and 220 publications in French, and 305 publications directly resulting from financed projects. However, this initial scoping remains to be put in perspective with a second inventory of publications that highlight the scientific activity of IMU researchers. This bibliometric study is under way and will help refine the likely number of publications that result more or less directly from the momentum created by the LabEx. **In conducting this study, we assembled a complex grouping of several bibliographic collections, in an innovative pilot project conducted at the level of the site and with the participation of UdL.** While *Web of Science (WOS)* allowed us to list 1853 publications – including 1101 articles and 596 proceedings papers – mentioning one or more LabEx IMU members, a complementary corpus including Scopus, GoogleScholar, Isidore and HAL-SHS appears necessary. WOS is clearly a relevant but only partially complete tool for IMU: *"The application of bibliometric tools such as are used in the hard sciences based only on reviews is a very partial representation of scientific production in HSS and therefore produces erroneous results for numbers of publications and citations"* [23]. An initial harvesting on HAL identified 4127 scientific articles for which one of the authors is a member of IMU. The refined bibliometric study currently being conducted should escape the masking phenomena created by bibliometric tools that are not well adapted to HSS disciplines (publication in French, portions of books and chapters in larger works within the total publications, etc.). A "LABEXIMU" collection on HAL renders this scientific production by the community visible, across all media.

This innovative approach, well aligned with the LabEx's positioning and one of the initiatives conducted within CapIMU (see below), is accompanied by a second, complementary initiative that utilises a new metric seeking to evaluate the impact of its activities outside the purely academic field. These **"altmetrics"** (alternative measures of research impact), **a pilot exploration at the UdL site,** highlight particularly well here again the radical multidisciplinary positioning of IMU.

Institutional communication also promotes recognition of the LabEx's research and actions with our partners in the urban studies arena. It is mainly digital: monthly newsletter since its creation, social network presence (1815 Twitter and 600 Facebook followers) and a dedicated website[24] which presents all our initiatives and our members as well as a video library and a press review.

Beyond IMU financing, impact has been promoted in other forms: development agreements with 20 public authorities[25], ten companies[26], five associations[27], transfer operations (five SATT[28] projects financed; two patents

[22] https://hal.archives-ouvertes.fr/ : HAL is an open archive where authors can deposit scholarly documents from all academic fields.

[23] Dassa Michèle, Kosmopoulos Christine and Pumain Denise, "JournalBase. Comparer les bases de données scientifiques internationales en sciences humaines et sociales (SHS)", *Cybergeo: European Journal of Geography*, 8 January 2010. ; *Scopus more relevant than Web of Science for AERES/HCERES reviews*, https://carnetist.hypotheses.org/190

[24] http://imu.universite-lyon.fr

[25] Led by Métropole de Lyon (14 projects) and Ville de Lyon (seven projects). Also including: Agence d'Urbanisme de Lyon, Agence d'Urbanisme de St-Etienne, Archives du Rize, Archives municipales de Lyon, Bibliothèque Municipale de Lyon, Chambre des métiers et de l'artisanat, Communauté de communes de la plaine de l'Ain, Atmo Aura, Bibracte EPCC, Grenoble - Alpes Métropole, Météo

under study) and projects submitted to other funders (11 ANR projects accepted since 2015, one European project financed in 2017, five projects selected in 2018 in the Idex/Pulsalys call, winner of the French Government Manifestation of Interest TIGA Call in 2017; winner of the Region Call for Projects "Tiers lieu augmenté en 2018").

2. PROJECT DESCRIPTION AND EXPECTED IMPACT

2.1. SCIENTIFIC SCOPE AND CONTENTS OF THE PROJECT FOR THE NEXT FINANCING PERIOD, EXPECTED IMPACT

Putting into action a plurality of knowledge

IMU.2 intends to continue its trajectory with a focus on two dimensions. The first, "putting into action", has a dual meaning: intensification of radical plurality and affirmation of the action-oriented facet of IMU research. The second references full recognition of plural forms of knowledge and its elaboration: academic knowledge coexists with practice-based, operational and community knowledge, and knowledge from decision-makers (public and private) as well as of users and citizens. It is this coexistence that forms the core of IMU.2's approach and its positioning in the field of urban studies. After consultation with the community of researchers and practitioners (in general assembly, during annual community meetings), the Scientific Board and the External Scientific Council and representatives of the supervising institutions and laboratories, **IMU's steering committee decided to modify its organisation.** As shown in Figure 2, the original seven themes and workshops **will be restructured into four thematic research poles demonstrating multiple disciplinary intersections.**

- **Materials, sources, data: knowledge and expertise**. The question of materials in urban research mobilises a very large range of sources and resources, resulting from scientific efforts or produced and collected by practitioners (observatories), without counting the data and open data that digital tools are able to provide. All this information is characterised by its heterogeneity in terms of status, modes and methods of production, acquisition and operability. The goal is to improve the conditions for articulation and interoperability opportunities, using digital platforms, and also pursuing archiving and pooling efforts.
- **Environments and habitability of urban worlds**: this approach will continue to focus on issues of urban habitation, by addressing ecological, environmental, social, political and development questions. The terms environment and habitability serve to interconnect life sciences (ecosystem, medicine, etc.) and social sciences, through their use across these fields. With habitability becoming a key concern, largely shared by the various players in urban affairs, it is expected that this subject will create connections at all levels of these issues.
- **Urban times and rhythms:** this approach follows on many projects conducted under IMU.1. It involves the study of contemporary issues via a historical perspective and related history knowledge, as well as the combination of multiple temporalities in contemporary urban phenomena ("biological" and ecological, social, political, individual... and "instantaneous" digital times). Today's urban world results

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France, Musée des Confluences, Musée Gadagne, Musées d'archéologie de Catalogne - Ullastret, RhonalpEnergie Environnement, Syndicat de l'Ouest lyonnais, Sytral, Tuba.

[26] BURGEAP, Eau du Grand Lyon, Atelier des Docks, Biin, Home in Love, PassionFroid (Groupe Pomona), Veolia, VICAT, VIGS, Webcastor

[27] Arthropologia, GROOF, Marmite urbaine, OCI Vélo (Saint-Etienne), Pignon Sur Rue, Tubà

[28] SATT : https://www.pulsalys.fr ; University of Lyon incubator for research projects.

from ongoing processes in timeframes of differing lengths depending on the specific topic. It can only be understood if a refined understanding of temporalities (construction and buildings, uses of spaces, collective memories, population modalities, developments, etc.) and the rhythms and pulses of change contribute to research.

- **Sensitive intelligence of contemporary urban worlds**: this involves addressing urban issues via changes in practices by the various players. The field of aesthetics is one of the contemporary areas of application (artistic productions in public spaces). In addition, in the field of research, multisensory capture of the urban relationship (sound, smell, sight), mobilising the category of "experience", contributes to pragmatic approaches that many of the community's researchers adopt. It also references the new practices of participatory and collaborative science, where the latest projects financed by IMU have demonstrated their appropriations in the research arena.

Lastly, a project known as **CAPIMU** launched in 2017 will be fully operational for IMU.2. The goal is to create the means to study the implementation of radical plurality in urban studies in and of itself, its advances and the barriers and difficulties it encounters, via feedback from experience. It involves evaluating the achievements of IMU.1 – and then continuing in IMU.2 – in terms of collaborations, knowledge production and scientific results as well as actual practices of radical plurality. This will serve to identify the barriers to be overcome, and the conceptual or technological innovations on which we should focus our energies. **It is precisely these scientific barriers and advances in our operational modes that IMU.2 proposes to continue to address by extending the approach initiated by CAPIMU. With this project, the LabEx will collectively begin to formalise its innovative research practices, which will be the subject of an international conference at the end of IMU.1 to share and showcase our experience. So, the CAPIMU project has a triple dimension for the LabEx — epistemological, scientific and social**. From the epistemological point of view, it is a question of theoretically formalizing the conditions of possibility required by the implementation of the radical plurality: coexistence and mutual understanding of different scientific paradigms, models of scientificity, relations with the action and the knowledge. From the point of view of scientific production, CAPIMU works to identify and remove the barriers of the effective implementation of plurality: construction of a shareable language, cross-fertilization of methods and frameworks of analysis, collective restitution of results. Finally, the choice of a radical plurality confronts the LabEx with the widening of the public involved in the process of knowledge production and reconfigures the articulation between professional knowledge, common knowledge and scientific knowledge. It reinterprets fundamentally, here on the urban theme, the link of Science and Action. This entire process should lead to a better transfer of IMU's experience, bet and results to international scientific scenes.

In this perspective, particular attention will be given to generating scientific value for the LabEx's work, not only via encouragement to publish, but also via the identification of or support for international scientific venues (reviews, colloquia, international scientific networks) that are relevant for the visibility and discussion of the LabEx's production.

These evolutions and extensions should further **improve the synergies of plurality** (collaboration with the observatories of Métropole de Lyon, OTHU, Tubà, SPL Confluence, etc.)**, continued positioning feedback knowledge (CAPIMU), visibility of IMU research, and intensify international exchanges.** On this last point in particular, strengthened international connections will focus on the spots identified during IMU.1 with the addition of a collaboration with MIT Boston (Medialab City Sciences), and the encounters in Asia (autumn 2018) on the topic of "data of the city" at the request of the French Foreign Affairs Ministry. To support this increased

international dynamic, the three LabEx (Dynamite, Futurs Urbains and IMU) are also proposing several scientific initiatives starting in 2020, based on an international symposium and shared summer schools. **The proposed dynamic thus aims to more broadly connect the communities at each site to other communities with research objects that might be pooled and complementary scientific perspectives. These organisational and functional enhancements should expand the scale of partnerships, scientific collaborations and visibility, in France and internationally.**

The IMU.2 project also wishes to contribute to building competency clusters on specific urban issues at the Lyon-St-Etienne site, by associating multiple disciplinary perspectives with practitioners to support new projects and foster innovation. The studios and projects are tools that are already operational. The "Jeux urbains" ("urban games") workshop launched in 2018 includes researchers, educators, urban players and gaming industry players with the aim of capitalising on and innovating in the area of gamified experiences. Similarly on the topic of waste, there is an articulation between IMU projects and others financed by ANR[29] and FEDER[30].

In terms of approach, IMU.2 will continue to launch an **annual call for projects**, in part aligned with topics that matured in the studios or are identified as priorities for their scientific or partnership potential. The call for projects will also include a "white" section, of around 30%, for the submission of proposals from the community.

2.2. RESEARCH-LEARNING INTERFACE AND EXPECTED IMPACT

It is important to develop this unique potential over the coming years, via the implementation of actions related to IDEX Lyon, which contributes largely to the site's resonance and even reinforces its dynamism by focusing on the systemic interface of the three PIA entities (H2O, EUL and IMU). This indispensable systemic interface nonetheless requires that the specificities of each component be identified, so as to increase their activity and interactions.

With a view to its renewal, LabEx IMU's aim is to continue to organise the field of urban studies on the site and to mobilise multiple operating modes to benefit education and courses of study. The creation of EUL and H2O, in 2017 and 2018 respectively, changed the academic ecosystem that witnessed the creation of the LabEx. Therefore, the role of education under IMU.2 must be rethought in this new context. However, education remains indivisible from research and dissemination under the IMU project. In this sense, consistent with the "plurality" of its project and in consultation with EUL and H2O, IMU will continue to support strongly innovative intersections in both basic and continuing education, together with the emergence of new professionality.

IMU.2 will renew its Call for Research Master Internship subjects associating two researcher members of the LabEx from two different disciplines, or a researcher and a practitioner, as well as its Call for Manifestations of Interest (AMI). The latter seeks to support innovative educational initiatives that aim to combine various modalities of knowledge production between and within courses of study.

IMU will continue to participate in mediation of research and new modalities of knowledge production for and with academic, professional and community audiences. It will support new initiatives, whether responses to PIA calls or planned new courses of study; IMU will also participate with its partners (including LUS and H2O) in Lifelong Learning initiatives.

[29] http://www.agence-nationale-recherche.fr/en/ : The French National Research Agency
[30] http://ec.europa.eu/regional_policy/en/funding/erdf/ : European Regional Development Fund

2.3. VALORISATION STRATEGY OF THE PROJECT AND SOCIO-ECONOMIC IMPACT

IMU's radical plurality leads to consideration that **the "socio-economic impacts" and value generated by the project are not merely productions of the LabEx's activity, but rather inseparable elements of its scientific project.** Any process of knowledge production is in part the product of the purposes assigned to it, which are often diverse and even contradictory. Hovering over the production of academic knowledge is the goal of understanding the world to participate in its environmental, social and political habitability. Such knowledge also contains a complementary desire for transmission and education. Some fields of scientific activity are strongly characterised by a critical approach, while others more commonly adopt more directly operational or even utilitarian aims. Still others remain distanced from both of these extremes in a formal paradigm. **Each of these blends contributes to defining the issues, experimentation or observation systems, analysis methodologies, theoretical frameworks, and forms of restitution and comparison of results. Each of these arrangements of purpose responds to a specific mode of scientificity, and contributes to shaping the process of production of scientific knowledge by relying on differentiated modes of scientificity.**

For practitioners, a purpose of action (act in the world) and sometimes of transformation (act on the world) is determinant and deployed in infinite variations which also contribute to the manner in which knowledge and skills are produced, transmitted and accumulated. **IMU's challenge is thus to bring forth new modalities of knowledge production from the intersection of these various purposes, because these new modalities will be necessary to address contemporary urban issues, whether these are posed in critical, action-oriented or comprehensive terms.** Lastly, IMU is postulating that this intersection can – and must – be symmetrical, that practitioners are as much in need of critical or formalised approaches by researchers, as researchers are of the action-oriented paradigm of practitioners to construct their approach (from data collection or observation to testing of research results).

Therefore, the IMU strategy, extended in IMU.2, in terms of value creation and socio-economic impacts, cuts across all modalities of the LabEx's activity. It integrates the relationship with practitioners throughout the research process, creating the conditions for research value in economic and societal terms. This aim involves **redefining the studios and themed workshops,** provided with a roadmap and resources as spaces dedicated to this emergence, as well as responding to other RFPs. **IMU has successfully responded** to that of the Auvergne Rhône-Alpes (AURA) region on "Tiers Lieu" along with Tubà[31] and Erasme[32]. This project constitutes a genuine operational lever for achieving this objective. Forming exclusive relationships with major urban players is also a way to help the research community enter into partnerships. Our goal is to achieve more ambitious groupings, in terms of resources mobilised as well as of reach, through various modalities (research chairs, partnership agreements, RFP submissions alongside public or private partners [academic institutions, public authorities, etc.]).

A second stage of intervention by LabEx IMU is to achieve genuine co-development of projects to be submitted to various programmes: Call for projects IMU, Call for projects ANR or other national or international research programmes. Here again, IMU commits facilitation resources to foster dialogue between academics and practitioners, as well as project engineering resources from our supervising institutions, as was the case for Lyon Ingénierie Projets in its first phase. The Scientific Board's evaluation modalities may also evolve towards increased dialogue during the project construction phase. This multifaceted support is designed with the aim of deepening

[31] Tubà, "Tube à expérimentation urbain", smart city idea laboratory

[32] Erasme, Urban Lab of Métropole de Lyon

dialogue between researchers and practitioners on two related aspects: defining project content and collaboration and financing modalities.

Once the project has matured, it may be pitched to a financing body. IMU.2 will continue to finance some 15 projects in 2020-2025, but also aims to present a significant number of projects whose construction was supported by the LabEx, to external financing bodies. The support system described in the preceding paragraph also serves to increase the success rate of the projects submitted. **For IMU, successfully financing research projects that associate academic research and practitioners is a dual feature of its aim: because these successes place urban research in a radical plurality approach in other venues than its own, and because they constitute actual impacts for the community.**

Concerning direct financing of projects by the LabEx, IMU.2 will extend the system of systematic evaluation by its Scientific Board. The quality of integration of practitioner partners in the research projects is an essential selection criterion expressed in the effective involvement of these partners in the project (time, resources contributed), the manner in which the project approach incorporates practitioners' questions, and finally the modes of restitution of results within and outside of the academic sphere. The LabEx thus monitors the equitable sharing of resources and project impacts, particularly with the research entities, as researchers are sometimes more attentive to the immediate financing of their research than to potential returns down the line. Overall, this approach seeks to ensure that projects financed by the LabEx fully respond to its aim of plurality, but also that they produce maximum results, both scientifically and in terms of socio-economic value.

In IMU's vision, restitution and sharing of project results are not merely an expectation, but an inherent feature of an approach of radical plurality. In standard academic research, peer review is a necessary test of work conducted. This research integrates the requirements of such review throughout. The plurality approach adds another form of review, that of rendering the results of the research to practitioner partners and their audiences in an understandable form. **This is not a "popularisation", but rather the end result of an approach of continuous integration of the questionings, needs, knowledge and practices of these operational players throughout the project implementation. In this way the project will produce not merely an outside evaluation, knowledge distinct from the partner, but knowledge that is co-developed by the partner who can make genuine use of the scientific added value.** This is also how "reciprocal enrichment" will be truly symmetrical and academic research can emerge transformed by its confrontation with operational requirements.

The generation of socio-economic value from projects conducted under radical plurality is often the "logical" result alongside the creation of scientific value. Depending on the nature of the project and partners, this implementation generates economic value that a well-designed consortium agreement at the beginning of the project will distribute. Research conducted with radical plurality thus leads to value creation in terms of economic or socio-economic impacts in research fields that do not always achieve such impact. More broadly, it is an approach that amplifies and deepens the value of research by requiring articulation with practitioners throughout the research process. With IMU.2, the LabEx will continue the close collaboration that it has gradually formed with SATT Pulsalys[33] and other value creation systems within its scope.

[33] Société d'accélération de transfert de technologie

2.4 SCIENTIFIC AND EDUCATIONAL INTEGRATION INTO THE STRATEGY OF THE SPONSOR INSTITUTIONS AND PARTNER INSTITUTIONS

With its project and through the formation of a community of research, IMU paved the way for other systems formed on the site (EUL and H2O) whose scopes intersect with the LabEx. This enriching of the site necessarily leads to the identification of the specificities of each in a perspective of complementarity and synergy, necessary to the growth of this plurality of resources.

IMU shares a positioning with these systems – scientific plurality (including that of the laboratories and institutions) – and areas of focus (generalised urban phenomenon, urban *Anthropocene*, "resource" issues, etc.). However, IMU.2's singularity lies in its application of **radical plurality** (academic environments / practitioner environments), which fosters a different approach to societal issues. Collaboration will involve shared actions (co-financed projects, scientific events) which might be formed if new systems emerged in the landscape of the site. Action modalities specific to IMU and collaborations with other systems will continue to be framed by the organisation proposed by IDEX and with the current structure of UdL as shown in Figure 4 and Figure 5. The domains defined under IMU.1 draw on the excellent resources available on the site within the scopes defined by the University of Lyon.

UdL academic colleges	arts, culture, design, architecture	literature languages philosophy	social sciences	law, management economics	education cognition, language	formal natural sciences	life and health sciences	engineering and technology
Number of IMU laboratories	5	6	11	6	2	7	5	9

Figure 4: IMU's positioning within the University of Lyon

Scopes envisioned for the IDEXLYON education and research poles	biosciences and pharmaceutical sciences	sciences, technology and society	basic disciplines	economy, administration, manage-ment	engineering	medical sciences	education, culture and society	law
Number of IMU laboratories (projected)	3	15	22	4	5	0	17	2

Figure 5: IMU's positioning within the IDEXLYON

The urban studies community formed within IMU is present in almost all the areas that structure the site today and in the future, demonstrating the necessity and opportunity of offering a plural approach to urban research at Lyon/St-Etienne. With this in mind, we propose in Figure 1, right-hand section, a scenario in conjunction with EUL and H2O, that would enable the formation by 2020 of an “Urban territories, ecosystems, environmental transition” pole. This pole strongly connecting the courses of study and laboratories could result in the creation of an Institute of Urban Studies and Ecosystems, generating real synergies within IDEXLYON and international visibility for an outstanding concentration of competencies and powerful momentum. IMU is also a part of the dynamic initiated by IDEXLYON and contributes very actively to its initiatives. We can mention here IMU's participation in several applications for foreign researchers as part of the Collegium, its engagement in

developing the U-MOVE project to respond to the KIC Urban Mobility RFP, its past support for the Altervilles course which now has the IDEX label, the creation of the LABEXIMU collection in the open science section, the current project for a DATA chair supported by the IDEX with a major industrial player, and the creation of the "urban games" workshop or the instructional innovation CMI in support of the IDEX's initiatives in this direction.

Similarly, the LabEx is open to many other PIA objects and financing. Here we mention again only briefly the joint dynamic that led to the success of the EUL Convergence Institute and EUR H2OLyon. We can add the close links formed with SATT Pulsalys (reflected for example in the selection of several HSS projects from our community for maturation).

IMU now covers a very large area resulting from the convergence of issues arising from the research fronts. IMU.2 intends to continue to structure research by contributing to the emergence of long-term tools, anchoring themes, actors - academic or not - and skills around the site. These tools take different forms: research chairs, long-term partnerships, PIA objects, KIC, territorialized projects. The objective of these tools is to take part of innovative responses to identified issues, in increasing the competence of the various stakeholders, in terms of research and professional skills, to contribute to the establishment of shared communities of knowledge.

Among the themes that are of great importance for the territory as well as for the academic site, some have already given rise to achievements to which IMU has made a major contribution: "living together" through the HEVD Chair, the urban *Anthropocene* of the EUL, and the urban hydrosystems of the H2O EUR. Other initiatives are underway: on the role of industry through the TIGA project, or on mobility by the proposal of the U-Move consortium to the KIC Urban Mobility call for projects, waiting for the formalisation of other structuring projects on energy (smart grids, smartmeters, alternative productions), urban logistics, or heat management, vegetation and building materials for example. **This is this constellation of tools that will allow IMU long-term project to produce an intelligence of urban worlds.**

3. PARTNERSHIP

3.1. GOUVERNANCE /GOVERNANCE

IMU is structured around a steering committee comprising faculty members from the IMU community (see Figure 6). It currently has four members, each with an area of responsibility:

- Gilles Gesquière, Scientific and Technical Manager of the LabEx: Professor (Université Lumière Lyon 2) in the LIRIS laboratory.
- Isabelle Garcin-Marrou in charge of education in IMU: Professor (Institut d'Etudes Politiques de Lyon) and director of the ELICO laboratory.
- Olivier Klein in charge of partnership relations in IMU: Researcher (Ecole Nationale des Travaux Publics de l'Etat) and associate director of the LAET laboratory.
- Isabelle Lefort in charge of research conducted in IMU: Professor (Université Lyon2) in the EVS laboratory.

This governance is supplemented by a Scientific Board comprising 20 members drawn from IMU member laboratories. One-third of members are renewed every two years.

An External Scientific Council comprising members from the national and international scientific community meets once a year to issue opinions and recommendations for the LabEx's actions.

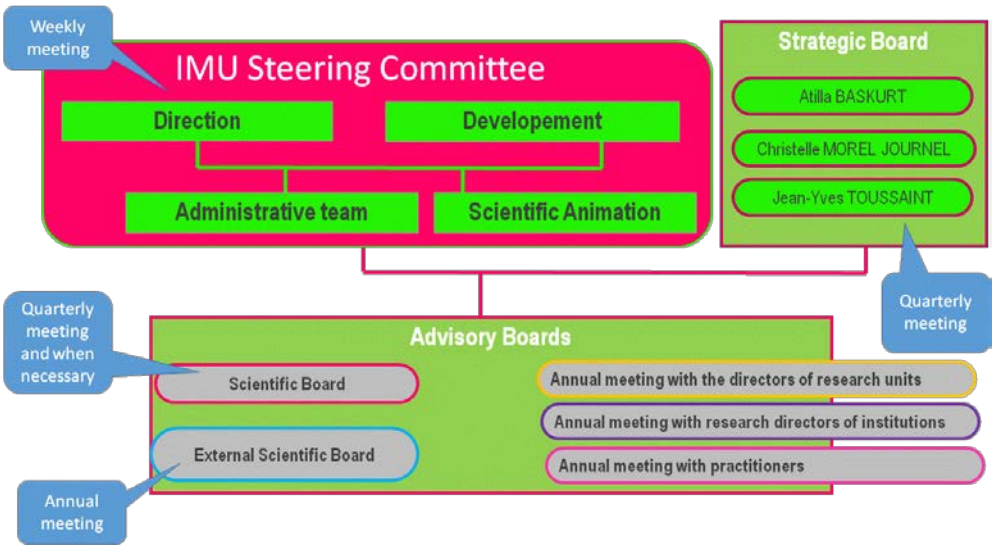

Figure 6: modes of governance and frequency of meetings.

3.2. CONSORTIUM MODIFICATIONS

The Consortium will not be significantly modified in this proposal. However, please note that registration of new sponsors and laboratories is ongoing with validation by the steering committee of the call for integration submitted by the director of the laboratory applying. Researchers in this laboratory then submit individual applications with a CV and proposal for positioning within IMU. These applications are also evaluated by the steering committee.

3.3. PARTNERS' DESCRIPTION, RELEVANCE AND COMPLEMENTARITY

IMU covers a thematic and disciplinary range equal to its ambition of addressing urban questions in their full complexity. The LabEx's 34 member laboratories belong to 21 sponsor institutions. Within these units, 541 researchers have requested LabEx membership. Alongside the founding scientific disciplines — Geography, Development and urbanism, Political science, History, Archaeology, Sociology, Philosophy, Informatics, Civil engineering, Energy, Biology, to cite only the major French CNU sections involved at the time — the integration of ten new laboratories brings in complementary disciplines, extending the field of research questions being investigated — in particular Social psychology, Law, Ergonomics, Information and Communication Sciences, and Biomechanics. These successive integrations serve to renew our approaches and expand the urban topics addressed (such as transport and mobilities, decision support system, environment and health risks).

IMU also represents sustained relationships with nine community and public socio-economic partners (Tubà, EPURES, GRAIE, ZABR, OTHU, ENVIRONALP, CLUSIR, CATEL, UrbaLyon), more than 20 industrial partners (Bouygues, Lafarge, ENEDIS, EGIS, EDF, NEXITY, Wordline, Véolia, Suez, Renault, etc., as well as startups such as Home in Love and YoobakY) and six excellence clusters: Imaginove, Axelera, CARA, Tenerrdis, Indura, Lumière. Radical plurality brings with it a natural, multiple and necessary complementarity to propose original approaches in the scientific treatment of questions concerning urban worlds.

4. FUNDING JUSTIFICATION

4.1. EXPENSES JUSTIFICATION

IMU.2's budget continues on from that of IMU.1 with a strong research facet and continued support for courses of study. A limited share, necessary to the project (10%) is dedicated to the LabEx's governance, administration and operations.

A summary budget table is provided below and detailed in the financial appendix.

	Total k€	k€/an
Research		
Post-doctorates (x 14 projects)	588	117,6
PhD Students (x 14 projects)	1470	294
Projects functioning (6k€/CDD)	336	67,2
Studio / incubator animator	200	40
In/out Mobilities (missions)	125	25
Scientific animators (2 pers)	450	90
Training		
Call for interest manifestations: functioning	55	11
Call for interest manifestations: missions	45	9
Call for Master internship (12 internship/year)	193,0	38,6
Governance		
Coordination support (1 pers)	240	48
IMU internal operation	100	20
Missions (CoPil, COS, CS...)	84,6	16,9
Legal and development support	167,5	33,5
Overheads	324,3	
Total	**4378,378**	

4.2. FUNDING PLAN

IMU's scientific structure has progressively ramped up and demonstrated the value of its plurality. The number and scope of projects supported by IMU have constantly expanded since its creation. Note that 541 researchers make up IMU, for a total annual payroll of €12.3m for the 21 institutions.

Today IMU expends €1.7m per year, whereas it spent less than €400,000 over its initial two years. The current allocation for IMU.2 (calculated on the basis of IMU.1, or approx. €800,000 per year) is thus far below the budget required to fully deploy the LabEx's potential; IMU.2 will therefore increase its capacity to gain other sources of public (ANR, H2020, Ademe, PIA, etc.) and private funding (partnerships).

An overall review of the financing potential of the IMU teams serves to create budget forecasts for the financial resources that might be accessed by the community.

For example, for the year 2016 and with the generic ANR call only, 23 projects were supported by IMU (for a total of €3,578,054 in aid), of which 13 have moved to stage 2, and five were ultimately selected for a total of €1,242,574 (an average of €250,000 per project). By extrapolating, it is reasonable to predict that IMU.2 might access **€400,000 to €600,000 in public funding annually** starting in 2020.

Following the same approach for responses to CFPs, private collaborations, service provisions, studies and evaluations, educational initiatives and finally corporate sponsorship, we can predict cofinancing for IMU.2 on the following basis:

Projects	Amount IMU/ project in k€	2020	2021	2022	2023	2024	Projects Nb	**Total**
National calls (ANR, Ademe...)	250	2	2	3	3	4	14	**3500**
Europe	175			1			1	**175**
ERC	750					1	1	**750**
Collaborations	40	2	2	3	3	4	14	**560**
Training	10	1	1	2	2	2	8	**80**
Chairs/Patronage	40		3	3	3	2	11	**440**
							49	**5505**

It must be specified that these amounts funding research within the IMU scope are under the purview of the partner laboratories.

Thus, using the hypothesis of projection of the IMU teams, the LabEx can hope to capture €600,000 to €2m per year:

Funding source	2020	2021	2022	2023	2024	**Total (k€)**
National calls (ANR, Ademe...)	500	500	750	750	1000	**3500**
European projects	0	0	175	0	0	**175**
ERC	0	0	0	0	750	**750**
Collaborations	80	80	120	120	160	**560**
Training	10	10	20	20	20	**80**
Chairs/Patronage	0	120	120	120	80	**440**
Recettes	590	710	1185	1010	2010	**5505**

Mobilising external funds will enable the LabEx to commit more resources to its initiatives and to fostering research; the LabEx will thus strengthen its role as a catalyst for the interconnection of disciplines and actors. We also propose to the Scientific Committee a system of consultation/labelling of projects submitted for external financing.

Lastly, the LabEx may benefit from support from its sponsor and partner institutions; such as for example the provision of staff (IMU has two FTE from INSA Lyon since 2013), the allocation of doctoral or post-doctoral grants, and research and faculty positions.

5. Assessment of the LabEx by the main institutions

NB: Letters of engagement from institutions are uploaded directly to the site.